



Air Quality Permitting Statement of Basis

May 4, 2006

Tier I Operating Permit No. T1-030315

**Pegram Compressor Station
Northwest Pipeline Corporation
Williams Gas Pipeline**

Facility ID No. 007-00004

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DRAFT to PUBLIC COMMENT

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Acronyms, Units, and Chemical Nomenclatures

40 CFR 60.330	NSPS Subpart GG: Standards of Performance for Stationary Gas Turbines
AFS	AIRS Facility Subsystem
AIRS	Aerometric Information Retrieval System
AQCR	Air Quality Control Region
Btu	British thermal unit
CAM	Compliance Assurance Monitoring
CFR	Code of Federal Regulations
CO	carbon monoxide
DEQ	Department of Environmental Quality
EPA	U.S. Environmental Protection Agency
HAPs	hazardous air pollutants
hp	horsepower
IDAPA	a numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
lb/hr	pound per hour
MACT	Maximum Achievable Control Technology
MMBtu	million British thermal units
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO _x	nitrogen oxides
NSPS	New Source Performance Standards; 40 CFR 60
PM	Particulate matter
PM ₁₀	Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers
PSD	Prevention of Significant Deterioration
PTC	permit to construct
SIC	Standard Industrial Classification
SO ₂	sulfur dioxide
Subpart GG	Subpart GG to NSPS: Standards of Performance for Stationary Gas Turbines; 40 CFR 60.330 thru .335
T/yr	tons per year
VOC	volatile organic compound

1. PURPOSE

The purpose of this memorandum is to explain the legal and factual basis for this draft Tier I operating permit, as required by IDAPA 58.01.01.362 – Technical Memorandums for Tier I Operating Permits.

2. FACILITY DESCRIPTION

The Pegram Compressor Station operates remotely from NWP's headquarters, located in Salt Lake City, and is used to transmit natural gas along NWP's natural gas transmission pipeline. The station is operated to meet the demand of the pipeline system rather than a fixed schedule. The arrangement of pipes and valves in the Pegram pipe yard allows natural gas to be transmitted in either direction of the pipeline.

Natural gas entering the station passes through two in-line filters (one for each turbine) that remove any impurities from the gas stream. The natural gas is compressed through the compressor and is returned to the transmission pipeline. Fuel for the turbine and other natural gas combustion equipment enters the station in a separate pipeline that originates in the pipe yard. Fuel gas is lowered from the pipeline pressures to pressures appropriate for the turbines in the fuel gas building.

From the fuel gas building, natural gas is transported to the turbines, the fuel gas heater, the space heaters, and the oil compressor. The turbines, fuel gas heater, and backup air compressor have their own exhaust stacks.

The emissions from the Pegram Compressor Station are largely the result of natural gas combustion. In addition, there are small amounts of emissions from various other sources.

3. FACILITY / AREA CLASSIFICATION

This facility has criteria emissions over 100 T/yr, and thus is a major facility as defined by IDAPA 58.01.01.008.10. The facility emits less than one ton per year of HAPs, therefore it is not major for HAPs because it emits less than 10 tons per year of any single HAP, and less than 25 tons per year of combined HAPs. The facility is not a major facility as defined by IDAPA 58.01.01.205 and it is not a designated facility as defined by IDAPA 58.01.01.006.26. The AIRS information provided in Appendix A defines the classification for each regulated air pollutant at the facility.

The facility is located just outside of Pegram, Idaho, which is classified as unclassifiable for all federal and state criteria pollutants (SO₂, NO_x, CO, PM₁₀, ozone, and lead). Northwest Pipeline's Pegram Facility is located in AQCR 61 and UTM Zone 12.

The SIC defining the facility is 4922, *Natural Gas Transmission*.

This facility is subject to the New Source Performance Standard (NSPS) of 40 CFR 60.330 thru 60.335 – Subpart GG, Standards of Performance for Stationary Gas Turbines.

The facility is not subject to any of the following federal requirements:

- 40 CFR 61 National Emissions Standards for Hazardous Air Pollutants (NESHAP)
- 40 CFR 63 Maximum Available Control Technology (MACT)
- 40 CFR 64 Compliance Assurance Monitoring (CAM).

4. APPLICATION SCOPE

This permitting action is a renewal of the facility's existing Tier I operating permit. Permit condition updates are listed in Section 6 – *Permit Conditions* – of this memorandum.

4.1 Application Chronology

June 25, 2003	DEQ received the permit renewal application
August 6, 2003	DEQ determines application complete
September 14, 2005	DEQ provides draft permit for facility and regional office review

5. PERMIT ANALYSIS

5.1 Emissions Inventory

An update emissions inventory is provided as Appendix B of this document. The portable turbine permitted under PTC No. 007-00004, issued August 23, 2001, has been permanently removed from the facility, including all required connections. This has resulted in an emissions decrease at the facility. DEQ terminated the portable turbine PTC December 21, 2005.

5.2 Regulatory Review

This section describes the regulatory analysis of the applicable air quality rules with respect to this permit.

40 CFR 60, Subpart GGStandards of Performance Stationary Gas Turbines

This New Source Performance Standard (NSPS) establishes the requirements for all stationary gas turbines with heat input at peak load equal to or greater than 10.7 gigajoules (10 million Btu) per hour, based on a the lower heating value of the fuel fired, and have commenced construction, modification, or reconstruction after October 3, 1977. Both turbines at Pegram Station are subject to the standard, and have already undergone the initial performance test required by the regulation to show compliance with the NO_x ppm standard.

Revisions to NSPS Subpart GG are incorporated into this permit. The custom fuel monitoring provision used to show compliance with the fuel sulfur content standard of Subpart GG has been replaced.

Subpart GG revisions state that the operator may elect not to monitor the total sulfur content of the gaseous fuel combusted in the turbine, if the gaseous fuel is demonstrated to meet the definition of natural gas in §60.331(u). Northwest Pipeline has opted to demonstrate compliance with the sulfur content provisions according to 40 CFR 60.334(h)(3)(i): “The gas quality characteristics in a current, valid purchase contract, tariff sheet or transportation contract, specifying that the maximum total sulfur content of the fuel is 20.0 grains/100 scf or less, shall be used to demonstrate compliance with the definition of natural gas.”

FERC Gas Tariff

Northwest Pipeline has submitted the Federal Energy Regulatory Commission (FERC) Gas Tariff to satisfy §60.334(h)(3)(i). The Tariff clearly specifies:

- in Sections 3.1(a) and 3.1(a)(2) that the gas shall contain not more than one quarter grain of hydrogen sulfide per 100 cubic feet and not more than 20 grains total sulfur per 100 cubic feet for all gas delivered by Shipper to Transporter at Receipt Points not connected to the La Plata Facilities; and,
- in Section 3(b) that all gas delivered by Shipper to Transporter at Receipt Points connected to the La Plata Facilities shall contain not more than 0.3 grains of mercaptan sulfur per 100 cubic feet of gas. The gas shall contain not more than 0.75 grains of total sulfur per 100 cubic feet of gas.

The two subdivisions of La Plata and non La Plata gas constitute 100% of Northwest Pipeline's natural gas.

The turbines at the facility have satisfied the initial test requirements of Subpart GG and the facilities PTCs; therefore, SO₂ testing requirements are satisfied. This Tier 1 permit renewal addresses revisions to NSPS Subpart GG in Permit Conditions 3.8 and 4.8: replacement turbines shall comply with the NO_x requirements of the subpart; SO₂ testing is no longer required, but replaced with the tariff evidence of natural gas sulfur content.

40 CFR 63 Subpart HHHNational Emission Standards for Hazardous Air Pollutants
from Natural Gas Transmission and Storage Facilities

Subpart HHH (§ 63.1270 et. seq.) sets standards for glycol dehydrators at sources which are a major source of HAPs. Pegram Station is not a major source of HAPs and does not contain a glycol dehydrator; therefore, the standard does not apply.

40 CFR 63 Subpart YYYYNational Emission Standards for Hazardous Air Pollutants for
Stationary Combustion Turbines

Subpart YYYY establishes national emission limitations and operating limitations for hazardous air pollutants (HAPs) emissions from stationary combustion turbines located at major sources of HAP emissions, and requirements to demonstrate initial and continuous compliance with the emission and operating limitations. Pegram Station is not a major source of HAPs; therefore, the standard does not apply.

6. PERMIT CONDITIONS

6.1 Permit Condition Changes

The following Permit Conditions have been changed with this Tier 1 permit renewal. No applicable PTC conditions have been changed with this Tier 1 permit renewal.

Permit Section 1: TIER I OPERATING PERMIT SCOPE

Regulated Sources

Permit Section 1 was added as a Tier 1 permit format update. Table 1.1 *REGULATED SOURCES* reflects removal of the Solar T-4700S portable turbine.

Permit Section 2: FACILITY-WIDE CONDITIONS

Test Methods

Permit Condition 2.11 changed the NO_x test methods to reflect the initial performance requirement of NSPS Subpart GG and the periodic compliance use of Reference Method 7E for NO_x compliance determination.

Permit Sections 3 and 4: SOLAR T-4700 and T-4500 TURBINES

Monitoring and Recordkeeping Requirements

Permit Conditions 3.7 and 4.7 change the basis for NO_x emission estimates and emission limit compliance. The previous Tier 1 permit required hourly fuel use monitoring and emissions calculations based on the highest hourly fuel use applied to turbine emission factors. The new requirements apply the most recent emission test results (in lb/hr or lb/MMBtu) to actual hours of operation or actual fuel use to show compliance with the NO_x emission limits.

Permit Conditions 3.9 and 4.9 change the periodic compliance testing for NO_x from results-determined frequency to biennial frequency. The Permit Conditions also serve to differentiate between periodic compliance test methods (Reference Method 7E) and initial performance test methods (NSPS Subpart GG).

Permit Conditions 3.10 and 4.10 reflect the change in NSPS Subpart GG requirements for demonstrating fuel sulfur content compliance. Periodic fuel sampling is no longer required; a current tariff sheet now serves as demonstration of compliance (40 CFR 60.334(h)(3)(i)).

7. PUBLIC COMMENT

Public notice and public comment period, including an opportunity for a hearing, affected states review; and EPA review will be provided as required by IDAPA 58.01.01.364 and 366, respectively.

7.1 Regional Review of Draft Permit

DEQ's Pocatello Regional Office was provided a draft for review on September 14, 2005.

7.2 Facility Review of Draft Permit

The facility was provided a draft for review on September 14, 2005. Facility comments were received and most were incorporated as requested. However, a request to change the NO_x emissions for Unit 2 could not be granted because the emissions limit is established in a PTC. The annual NO_x limit of 68.8 ton per year is based on an average as submitted in the PTC application in 1994.

7.3 Public Comment

A public comment period will be provided as required by IDAPA 58.01.01.364.

8. FUEL TYPE

The requirement for pipeline quality natural gas to be burned in the turbines satisfies the sulfur standards for NSPS Subpart GG.

9. INSIGNIFICANT ACTIVITIES

Table 5.1 lists the insignificant sources at the Pegram Compressor Station. These emission units qualify as insignificant due to the quantity of emissions or to the source being specifically listed in IDAPA 58.01.01.317.01(a/b). While there are no monitoring requirements for insignificant emissions units at this facility, these units must comply with all applicable federal, state, and local requirements.

Table 5.1 INSIGNIFICANT ACTIVITIES AND EMISSION UNITS

Description	Insignificant Activities Section Citation IDAPA 58.01.01.317.01
Fuel Gas Heater 250,000 Btu/hr	b.i.(5)
Back-up Air Compressor Wisconsin 15 hp Natural gas fired	a.i.(78)
Space Heaters	b.i.(5)
Lubricating Oil Tanks Two make-up oil tanks at 500 gallons each; One 90 barrel used oil tank.	a.i.(4)
Natural Gas Pipeline and Fuel System	b.i.(30)
Combustion toilet 25,000 Btu/hr	b.i.(5)

Emissions from the lubricating oil system are small amounts of VOC. Emissions from the natural gas pipeline and fuel system are VOC and some HAPs and TAPs. These emissions result from leaking valves, flanges, pressure relief valves, and an annual testing of the emergency shutdown system that includes a facility-wide blowdown. Emissions generated from all other insignificant emissions sources are products of natural gas combustion, which include PM₁₀, SO₂, CO, NO_x, VOCs, and some HAPs and TAPs.

10. REGISTRATION FEES

This facility is a major facility as defined by IDAPA 58.01.01.008.10; therefore, registration and registration fees in accordance with IDAPA 58.01.01.387 apply.

11. RECOMMENDATION

Based on the Tier I application and review of state rules and federal regulation, staff recommends that DEQ provide draft Tier I operating Permit No. T1-030315 for public comment as required by IDAPA 58.01.01.364.

CM/bf Permit No. P-030315

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